

RS-422/485 DB9 CardBus Adapter

1 Port RS-422/485 DB9 CardBus Adapter

CB1S485

Instruction Manual



Actual product may vary from photo

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FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Introduction

Thank you for purchasing a StarTech.com CardBus RS-422/485 Card. This high performance RS-422/485 card works well with two-wire (with Auto Transceiver Turn Around feature, ATTA™) and four-wire configurations and offers 16C950 compliant UARTs for broad serial device compatibility.

Features

- RS-485 mode supports Auto Transceiver Turn Around (ATTA)
- 128-byte deep FIFO per transmitter and receiver
- UART is 16C950 compatible to work with most serial devices
- Supports the RS-485 and RS-422 serial interfaces
- Maximum data transfer rate up to 921kbps

Before you begin

System requirements:

- A host computer with an available CardBus Slot. Please note that CB1394B3 can be used on a desktop computer, using a PCMCIA to PCI Adapter Card For more information, please see **Accessory Products from StarTech.com**.
- Operating System: Windows 98/ME/NT/2000/XP/2003/VISTA/LINUX

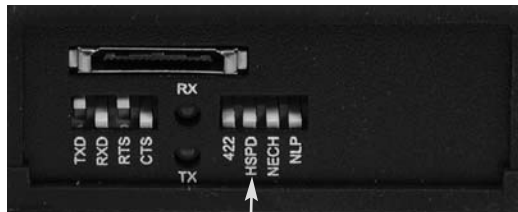
Package contents:

This package should contain:

- 1 x Serial PCMCIA Card
- 1 x Breakout Cable
- 1 x Instruction Manual
- 1 x Driver CD

Hardware Guide

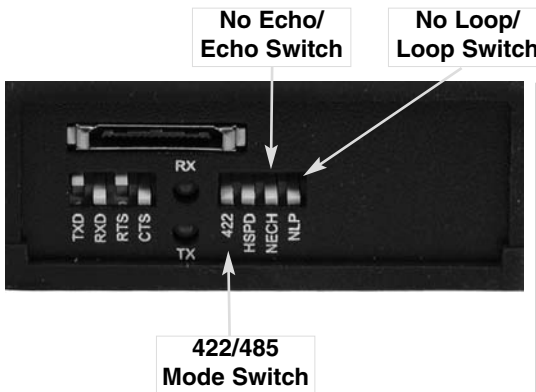
UART Input Clock Speed Selector



HSPD Switch

Switch Name	Switch Positions	Clock Speed
HSPD	(Up)	UART Input Clock Speed = 1.8432MHZ, Maximum baud rate is 115.2Kbps
	(Down) (Default)	UART Input Clock Speed = 14.7456MHZ, Maximum baud rate is 926.1Kbps (default). Setting requires adjustment from Windows Device Manager

RS-422/485 Mode Selector



**No Echo/
Echo Switch**

**No Loop/
Loop Switch**

**422/485
Mode Switch**

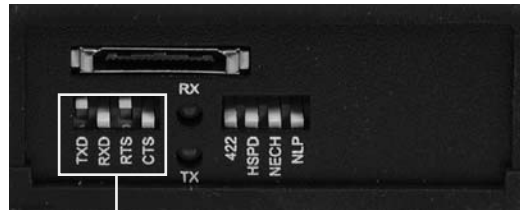
Switch Name	Jumper Positions	Mode and Termination Resistor Setting
422	Up (default)	2-wire RS-485 mode (Note)
	Down	4-wire RS-422 mode
NECH	Up	Transmitting data will be echoed back
	Down (default)	No echo data
NLP	Up	RTS will be connected to CTS
	Down (default)	RTS and CTS operate normally

Please note:

- Please note that if the mode were set at "422" mode, the other settings (NECH and NLP settings) will take no effect.
- Echo mode is used to detect data collisions. If the echoed data was not equal to the transmitted data, then data collisions are occurring.

Hardware Guide - Cont'd

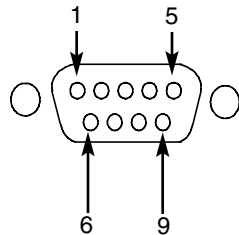
Terminator Settings



Terminator
Enable/Disable
Switches

Switch Name	Switch Settings	Termination Resistor Setting
TXD	Up (Default)	TXD Terminator Disabled
	Down	TXD Terminator Enabled
RXD	Up	RXD Terminator Disabled
	Down (Default)	RXD Terminator Enabled
RTS	Up (Default)	RTS Terminator Disabled
	Down	RTS Terminator Enabled
CTS	Up	CTS Terminator Disabled
	Down (Default)	CTS Terminator Enabled

DB9 Connector Pinout



9 Pins	Signal
1	TXD- (DATA-)
2	TXD+ (DATA+)
3	RXD+
4	RXD-
5	GND
6	RTS-
7	RTS+
8	CTS+
9	CTS-

Installation




Caution: It is advisable to remove all possible static discharge potential from any objects that the ExpressCard may come in contact with before installation. This can be accomplished by touching a grounded metal object, prior to insertion.

1. With the notebook PC powered on and fully booted, insert the PCMCIA Card into an available CardBus slot on the host computer.
2. Connect the 15-pin connector of the cable to your PC card, then connect the DB9 connector to your serial device.
3. The **Add New Hardware Wizard** will launch and will guide you through the driver installation process.

Driver Installation

Windows 98, ME, 2000, XP, 2003

The necessary driver files are in ZIP format (e.g. V6515_RS422_485.ZIP) and are located in E:\IO\OXFORD\RS422_485 (where E: denotes the CD/DVD-ROM drive). Please copy the file to your local hard drive (presumably C:) and unzip it before proceeding with installation.

1. When the **Found New Hardware Wizard** appears, click **Next** to continue.
2. Select **Install from a list or specific location (advanced)** and click **Next**. 
3. Select **Include this location in the search** and click **Browse** to specify the driver's location.
4. Click **Next** to continue, then click on **Finish** to complete installation.

Windows NT

Because Windows NT does not support plug and play, you will need to locate the Install_Serial.exe file (in the E:\IO\OXFORD\WinNT4 folder, where E designates the location of the CD/DVD-ROM drive), and double click on the executable file. Follow the prompts to complete installation.



RS-485 2-wire mode

To enable CB1S485 to operate in RS-485 2-wire mode:

1. Right-click on My Computer. If you are using Windows 98/ME, select **Properties**. If you are using Windows 2000/XP, select **Manage**.
2. Choose **Device Manager** and double-click on **Ports**.
3. You will notice the added ports, listed as a **PCI Communications Port**. Double-click on the COM Port you wish to configure, and select **Settings**.

Windows 2000, XP

1. In the **PCI Communications Port Properties** window, click on the **Settings** tab.
2. Under Hardware config, select **RS422/485**, and change the **RS485 buffer enable** value to **Active Low**, using the dropdown box provided. Click **OK** to save and exit.



Windows 98, ME

1. In the **PCI Communications Port Properties** window, click on the **Settings** tab.
2. Change the **DTR function** to **RS485 Buf_En Active low**, using the dropdown box provided.

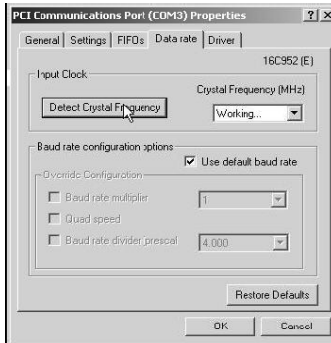
Baud Rate

By default, CB1S485 is set to a baud rate of 115.2Kbps (maximum). To increase the baud rate to 921.6Kbps maximum:

Windows 2000, XP

1. As mentioned on page 2, move the **HSPD** switch to the down position.

2. Right-click on **My Computer** and select **Manage**.
3. Choose **Device Manager** and double-click on **Ports**.
4. You will notice the added port, listed as a **PCI Communications Port**. Double-click on the COM Port you wish to configure, select **Data rate**, click on **Detect Crystal Frequency**, then **OK**.



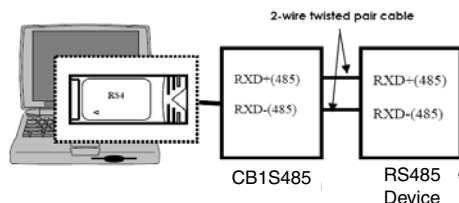
Windows 98/ME

1. As mentioned on page 2, move the **HSPD** switch to the down position.
2. Right-click on **My Computer** and select **Properties**.
3. Choose **Device Manager** and double-click on **Ports**.
4. You will notice the added port, listed as a **PCI Communications Port**. Double-click on the COM Port you wish to configure, select **Data rate**, and put a checkmark next to **Detect Crystal Frequency** by clicking in the box provided. Click on **OK** to save this setting.

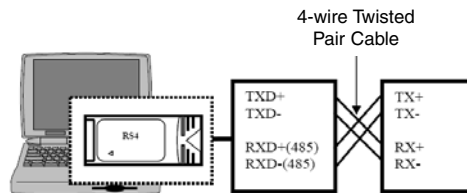
Application Wiring

RS-485 (Transmitter is controlled by ATTA™ Hardware)

Please note: CB1S485 supports optional auto echo mode operation. When enabled, data sent to the connected RS-485 transmitter is simultaneously sent to the receiver. The current application can then use the “echoed” data to check for data collisions.

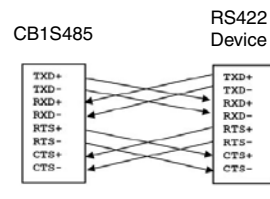


RS-422 (Transmitter buffer is always enabled)



Please note: CB1S485 supports 4-wire RS-422 mode, which requires cross-over twisted pair cable.

CB1S485 also provides two handshaking signals, RTS+/RTS- and CTS+/CTS- to perform hardware flow control, which requires the following wiring scheme:



Accessory Products from StarTech.com

Contact your local StarTech.com dealer or visit www.startech.com for cables or other accessories that will help you get the best performance out of your new product.



MC3MF
3 ft. AT Modem Cable DB9F-DB25M



MC6MF
6 ft. AT Modem Cable (male to female)



MXT100
6 ft. 9-pin Straight Through Cable (male to female)



SCNM925FM
10 ft. Cross Wired Serial/Null Modem Cable DB9F to DB25M



SCNM9FF
10 ft. Cross Wired Serial/Null Modem Cable DB9 F/F



PCI2PCMCIA1
1 Port CardBus/PCMCIA to PCI Adapter Card



PCI2PCMCIA1E
1 Port CardBus/PCMCIA to PCI Adapter

Specifications

Regulatory Certifications	ROHS, FCC, CE
Bus Type	32-bit CardBus Type-II Slot
Connectors	1 X DB9 MALE CONNECTOR
Maximum Data Transfer Rate	921 kbps
OS Support	Windows 98/ME/NT/2000/XP/2003/VISTA/LINUX
Bits Data Framing Support	5/6/7/8/9

Technical Support

StarTech.com's lifetime technical support is an integral part of our commitment to provide industry-leading solutions. If you ever need help with your product, visit **www.startech.com/support** and access our comprehensive selection of online tools, documentation, and downloads.

Warranty Information

This product is backed by a lifetime warranty. In addition, StarTech.com warrants its products against defects in materials and workmanship for the periods noted, following the initial date of purchase. During this period, the products may be returned for repair, or replacement with equivalent products at our discretion. The warranty covers parts and labor costs only. StarTech.com does not warrant its products from defects or damages arising from misuse, abuse, alteration, or normal wear and tear.

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